Amendments to the Claims

1. (Currently Amended) In wireless communication system, the communication system providing communication services to a plurality of mobile stations, a method for providing phase-shift transmit diversity, the method comprising:

time-varying phase-shift modulating a first signal with a first control signal to produce a first time-varying phase-shift modulated signal including a first phase shift;

time-varying phase-shift modulating a second signal with a second control signal to produce a second time-varying phase-shift modulated signal including a second phase shift, the second time-varying phase shift being distinct from the first time-varying phase shift such that the second time-varying phase-shift modulated signal is diverse relative to the first time-varying phase-shift modulated signal;

controlling the first and second time-varying phase-shift modulated signals by the first and second control signals;

transmitting the first time-varying phase-shift modulated signal via a first antenna; and

transmitting the second time-varying phase-shift modulated signal via a second antenna,

wherein the first control signal is synchronized with the second control signal by a reference signal source.

2. (Currently Amended) The method of claim 1, wherein the step of time-varying phase-shift modulating a first signal with a first control signal to produce a first time-varying phase-shift modulated signal including a first phase shift comprises time-

varying phase-shift modulating a first signal with a first control signal to produce a first time-varying phase-shift modulated signal including a first constant phase shift and a first time-variable phase shift of 180° peak deviation operable in a phase direction.

3. (Currently Amended) The method of claim 1, wherein the step of time-varying phase-shift modulating a first signal with a first control signal to produce a first time-varying phase-shift modulated signal including a first phase shift comprises time-varying phase-shift modulating a first signal with a first control signal to produce a first time-varying phase-shift modulated signal including a first constant phase shift and a first time-variable phase shift of 180° peak deviation operable in an ascending phase direction.

4. (Currently Amended) The method of claim 1, wherein the step of time-varying phase-shift modulating a second signal with a second control signal to produce a second time-varying phase-shift modulated signal including a second phase shift comprises time-varying phase-shift modulating a second signal with a second control signal to produce a second phase-shift modulated signal including a second constant phase shift and a second time-variable phase shift of 180° peak deviation operable in a phase direction.

5. (Currently Amended) The method of claim 1, wherein the step of time-varying phase-shift modulating a second signal with a second control signal to produce a second phase-shift modulated signal including a second phase shift comprises time-varying phase-shift modulating a second signal with a second control signal to produce a

second time-varying phase-shift modulated signal including a second constant phase shift and a second time-variable phase shift of 180° peak deviation operable in a descending phase direction.

6. (Currently Amended) The method of claim 1, wherein the step of transmitting the first signal via a first antenna comprises transmitting the first time-varying phase-shift modulated signal via a main antenna.

7. (Currently Amended) The method of claim 1, wherein the step of transmitting the second signal via a second antenna comprises transmitting the second time-varying phase-shift modulated signal via a diversity antenna.

8. (Original) The method of claim 1 further comprising the steps of:

combining a first input signal and a second input signal to produce a composite signal; and

generating the first signal and the second signal based on the composite signal,

wherein the first signal is based on a first carrier and the second signal is based on a second carrier.

9. (Original) The method of claim 1, wherein the communication system operates in accordance with a code division multiple access (CDMA) based communication protocol.

10. (Currently Amended) In a wireless communication system, the communication system providing communication services to a plurality of mobile stations, an apparatus for providing time-varying phase-shift transmit diversity, the apparatus comprising:

a first signal path operable to provide a first signal;

a second signal path operable to provide a second signal;

a phase-shift controller adapted to provide a first control signal and a second control signal, the first control signal being synchronized with the second control signal by a reference signal;

a time-varying first phase-shift element coupled to the first signal path and the phase-shift controller, the first phase-shift element being operable to generate a first time-varying phase-shift modulated signal including a first phase shift based on the first signal and the first control signal;

a time-varying second phase-shift element coupled to the second signal path and the phase-shift controller, the second phase-shift element being operable to generate a second time-varying phase-shift modulated signal including a second phase shift based on the second signal and the second control signal;

a first antenna coupled to the first time-varying phase-shift element, the first antenna being operable to transmit the first time-varying phase-shift modulated signal; and

a second antenna coupled to the second time-varying phase-shift element, the second antenna being operable to transmit the second time-varying phase-shift modulated signal,

wherein the second phase shift being distinct from the first phase shift such that the second time-varying phase-shift modulated signal is diverse relative to the first time-varying phase-shift modulated signal.

11. (Original) The base station of claim 10, wherein the first phase shift comprises a first constant phase shift and a first time-variable phase shift of 180° peak deviation operable in a phase direction.

12. (Original) The base station of claim 10, wherein the first phase shift comprises a first constant phase shift and a first time-variable phase shift of 180° peak deviation operable in an ascending phase direction.

13. (Original) The base station of claim 10, wherein the first phase shift comprises a first constant phase shift and a first time-variable phase shift from 0° to 180° operable in an ascending phase direction.

14. (Original) The base station of claim 10, wherein the second phase shift comprises a second constant phase shift and a second time-variable phase shift of 180° peak deviation operable in a phase direction.

15. (Original) The base station of claim 10, wherein the second phase shift comprises a second constant phase shift and a second time-variable phase shift of 180° peak deviation operable in a descending phase direction.

16. (Currently Amended) The base station of claim 10, wherein each of the first and second time-varying phase-shift elements comprises a phase-shift element operable to provide a phase shift of 180° peak deviation.

17. (Currently Amended) The base station of claim 10, wherein each of the first and second time-varying phase-shift elements comprises a ferrite phase-shift circuit.

18. (Currently Amended) The base station of claim 10, wherein each of the first and second time-varying phase-shift elements comprises one of an open loop linearization and compensation circuit and a closed loop linearization and compensation circuit.

19. (Original) The base station of claim 10, wherein the first antenna comprises a main antenna.

20. (Original) The base station of claim 10, wherein the second antenna comprises a diversity antenna.

21. (Original) The base station of claim 10, wherein the phase controller comprises a phase controller adapted to provide a first control signal and a second control signal based on one of a reference signal of 19.6 Megahertz (MHz), a reference signal of an integer multiple of 1.2288 MHz, and a reference signal of an integer multiple of 50 Hz.

22. (Original) The base station of claim 10, wherein the phase controller comprises a four-port hybrid combination element, wherein the four-port hybrid combination element is operable to provide carrier combination.

23. (Original) The base station of claim 10, wherein the base station operates in accordance with a code division multiple access (CDMA) based communication protocol.

24. (Currently Amended) In a wireless communication system, the communication system for providing communication service for a plurality of mobile stations, wherein a processor operates in accordance with a computer program embodied on a computer-readable medium for providing transmit diversity, the computer program comprising:

a first routine that directs the processor to time-varyingly phase-shift modulate a first signal with a first control signal to produce a first time-varying phase-shift modulated signal including a first phase shift;

a second routine that directs the processor to time-varyingly phase-shift modulate a second signal with a second control signal to produce a second time-varying phase-shift modulated signal including a second phase shift, the second phase shift being distinct from the first phase shift such that the second time-varying phase-shift modulated signal is diverse relative to the first time-varying phase-shift modulated signal;

a third routine that directs the control the first and second time-varying phase-shift modulated signals by a phase control signal;

a ~~third~~ fourth routine that directs the processor to transmit the first time-varying phase-shift modulated signal via a first antenna; and

a ~~fourth~~ fifth routine that directs the processor to transmit the second time-varying phase-shift modulated signal via a second antenna,

wherein the first control signal is synchronized with the second control signal by a reference signal source.

25. (Currently Amended) The computer program of claim 24, wherein the first routine comprises a routine that directs the processor to phase-shift modulate a first signal with a first control signal to produce a first time-varying phase-shift modulated signal including a first constant phase shift and a first time-variable phase shift of 180° peak deviation operable in a phase direction.

26. (Currently Amended) The computer program of claim 24, wherein the first routine comprises a routine that directs the processor to phase-shift modulate a first signal with a first control signal to produce a first time-varying phase-shift modulated signal including a first constant phase shift and a first time-variable phase shift of 180° peak deviation operable in an ascending phase direction.

27. (Currently Amended) The computer program of claim 24, wherein the second routine comprises a routine that directs the processor to phase-shift modulate a

second signal with a second control signal to produce a second time-varying phase-shift modulated signal including a second constant phase shift and a second time-variable phase shift of 180° peak deviation operable in a phase direction.

28. (Currently Amended) The computer program of claim 24, wherein the second routine comprises a routine that directs the processor to phase-shift modulate a second signal with a second control signal to produce a second time-varying phase-shift modulated signal including a second constant phase shift and a second time-variable phase shift of 180° peak deviation operable in a descending phase direction.

29. (Currently Amended) The computer program of claim 24, wherein the ~~third~~ fourth routine comprises a routine that directs the processor to transmit the first phase-shift modulated signal via a main antenna.

30. (Currently Amended) The computer program of claim ~~23~~ 24, wherein the ~~fourth~~ fifth routine comprises a routine that directs the processor to transmit the second phase-shift modulated signal via a diversity antenna.

31. (Currently Amended) The computer program of claim 24 further comprising a ~~fifth~~ sixth routine, the ~~fifth~~ sixth routine comprising a routine that directs to processor to combine a first input signal and a second input signal to produce a composite signal and a routine that directs the processor to generate the first signal and the second

signal based on the composite signal, wherein the first signal is based on a first carrier and the second signal is based on a second carrier.

32. (Original) The computer program of claim 24, wherein the computer program operates in accordance with a code division multiple access (CDMA) based communication protocol.

33. (Original) The computer program of claim 24, wherein the medium comprises one of paper, a programmable gate array, application specific integrated circuit, erasable programmable read only memory, read only memory, random access memory, magnetic media, and optical media.